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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/637,090	08/06/2003	R. Jason Jouet	83,960	9325

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Indian Head, MD 20640-5035

EXAMINER

SAVAGE, JASON L

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 12/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/637,090

Applicant(s)

JOUET ET AL.

Examiner

Jason L. Savage

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 and 20-23 is/are rejected.
- 7) ☒ Claim(s) 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Claim Objections***

Claims 2 and 11 are objected to because of the following informalities:

Claims 2 and 11 do not recite proper Markush Group Language. Appropriate correction is requested.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitation that a covalent aluminum-oxygen bond is formed linking the attached layer and the bare aluminum mass is indefinite since such an aluminum-oxygen bond would be considered being surface oxidation. As was set forth in claim 1, the surface of the aluminum mass is absent any oxidation. It is unclear how claim 23 could have an aluminum-oxygen bond while still meeting the limitation that surface is absent any oxidation. Appropriate correction or clarification is required.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 4-6, 8-9, 13-18 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akao et al. (US 5,827,584).

Akao teaches a protected aluminum mass of powders wherein the powder have a layer attached to the surface by treating the aluminum mass with a fatty acid (col. 37, ln. 25-40). The protective attachment layer formed by treating with such a fatty acid would contain at least one carbon atom.

Regarding the limitation that surface of the aluminum mass is absent any oxidation; Akao is silent to the claim limitation. However, it teaches that the protective attachment layer on the aluminum mass provides oxidation prevention (col. 34, ln. 62 - col. 35, ln. 9). As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to have processed the aluminum mass of Akao in such a manner to insure the surface was absent any oxidation. Absent a teaching of the criticality or showing of unexpected results, the added claim limitation would not provide a patentable distinction over the prior art.

Regarding claims 2 and 8-9, Akao teaches the treating material may be a moiety selected from an aliphatic alcohol-based fatty acid wherein the aliphatic alcohol have between 1-12 carbon atoms and the fatty acid contain 10-22 carbon atoms (col. 56, ln. 18-38). Although Akao does not recite the specific number of carbon atoms which are contained in the protective coating, since it teaches ranges which encompass the ranges claimed by Applicant, it would meet the claim limitations.

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Regarding claims 4-5, Akao is silent to the particle size. However, absent a teaching of the criticality or showing of unexpected results, the claimed particle size is merely a design choice and does not patentably distinguish the present invention over the prior art of record. *Eskimo Pie Corp. v. Levous et al.*, 3 U.S.P.Q. 23. *In re Rose* 105 U.S.P.Q. 237. *In re Dailey* 149 U.S.P.Q. 47.

Regarding claim 6, although Akao is silent to the protective layer being a monolayer, it is the position of the Examiner that such a monolayer structure would have been formed.

Regarding claims 13-14, Akao is silent to the mass ratio or weight percentage of the attached layer in comparison to the aluminum particles. However, it would have been within the purview of one of ordinary skill in the art to have added the protective material coating in an amount to sufficiently protect the aluminum material. Absent a teaching of the criticality or showing of unexpected results from having the attached layer in the claimed amounts, it would not provide a patentable distinction over the prior art.

Regarding claim 15, the protective layer formed by Akao would contain a functional group.

Regarding claims 16-17, although Akao does not recite that the attached layer is an energetic moiety or that the protected mass of aluminum is an energetic material, absent a definition of what the limitation of 'energetic' encompasses, it would not provide a patentable distinction over the prior art.

Regarding claims 18 and 20, Akao would meet the claim limitation since gathering the particles and treating them would meet the claim limitations of forming an unprotected aluminum mass and subsequently forming a reactant layer on the aluminum mass surface.

Regarding claims 21-22, the attached layer of Akao would meet the limitations of binding to the aluminum mass surface.

Claims 3, 7, 10-12 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akao et al. (US 5,827,584) in view of Brizzolara et al (US 6,259,092).

Regarding claims 3 and 7, Akao teaches what is set forth above however it is silent to treating the aluminum particles with a carboxylic acid to form the protective layer. Brizzolara teaches that protective monolayers for aluminum materials are known, wherein the protective monolayer is formed by treating the aluminum material with fatty acids such as carboxylic acid (col. 17, ln. 42-68). As such, it would have been obvious to one of ordinary skill in the art to have modified the article of Akao in view of the teachings of Brizzolara by selecting carboxylic acid as the fatty acid with a reasonable expectation of success of forming a protective monolayer on the aluminum particles.

It is well settled that the test of obviousness is not whether the features of one reference can be bodily incorporated into the structure of another and proper inquiry should not be limited to the specific structure shown by the references, but should be into the concepts fairly contained therein, and the overriding question to be determined is whether those concepts would suggest to one of ordinary skill in the art the

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modifications called for by the claims, *In re Van Beckum*, 169 USPQ 47 (CCPA 1971), *In re Bozek*, 163 USPQ 545 (CCPA 1969); *In re Richman*, 165 USPQ 509 (CCPA 1970); *In re Henley*, 112 USPQ 56 (CCPA 1956); *In re Sneed*, 218 USPQ 385 (Fed. Cir. 1983).

In response to the issue whether the reference is nonanalogous art, it has been held that the determination that a reference is from a nonanalogous art is twofold. First, one decides if the reference is within the field of the inventor's endeavor. If it is not, one proceeds to determine whether the reference is reasonably pertinent to the particular problem with which the inventor was involved, *In re Wood*, 202 USPQ 171, 174. In the instant case, both Akao and Brizzolara are generally drawn to aluminum particle masses having protective monolayers formed from fatty acid materials.

Regarding claims 10-12, although neither Akao or Brizzolara teach that the carboxylic acid is a perfluoroalkyl acid having the claimed formulas, Brizzolara does teach the general use of carboxylic acids which may contain 14 carbons (col. 17, ln. 65-67). It would have been obvious to one of ordinary skill in the art to have employed any known carboxylic acid, including perfluoroalkyl acids such as the 14 carbon containing acid claimed with a reasonable expectation of success. Absent a teaching of the criticality or showing of unexpected results from using the specific acids as claimed, they would not provide a patentable distinction over the prior art.

Regarding claims 16-17, although Akao does not recite that the attached layer is an energetic moiety or that the protected mass of aluminum is an energetic material,

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absent a definition of what the limitation of 'energetic' encompasses, it would not provide a patentable distinction over the prior art.

### ***Response to Arguments***

Applicant's arguments filed 10-6-05 have been fully considered but they are not persuasive.

Applicant argues that the present invention is distinct over Akao since Akao does not recite that the aluminum mass surface is absent any oxidation. However, since Akao teaches that the protective layer is added in part to prevent the surface of the aluminum mass from oxidizing, it would have been obvious to one of ordinary skill in the art at the time of the invention to have processed the aluminum mass in such a manner to insure the surface was absent any oxidation. Absent a teaching of the criticality or showing of unexpected results, the added claim limitation would not provide a patentable distinction over the prior art.

Regarding the rejection of Akao in view of Brizzolara, Applicant argues that Brizzolara and Akao are not analogous and thus would not have been combined by one of ordinary skill in the art. However, as was set forth above, both are generally drawn to aluminum particle masses having protective monolayers formed from fatty acid materials. Therefore, it would have been obvious to one of ordinary skill in the art to have recognized that carboxylic fatty acids could be employed as the protective monolayer material on the aluminum mass of Akao with a reasonable expectation of success.



***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

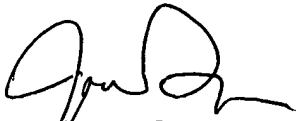
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason L. Savage whose telephone number is 571-272-1542. The examiner can normally be reached on M-F 6:30-4:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on 571-272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jason Savage  
12-22-05



**JENNIFER MONELL**  
**PRIMARY EXAMINER**  
12/26/05